

TWO NEW TAXA OF *CLINIDIUM* (COLEOPTERA:
RHYSODIDAE OR CARABIDAE) FROM THE
EASTERN U.S., WITH A REVISED KEY
TO U.S. *CLINIDIUM*

ROSS T. BELL AND JOYCE R. BELL

University of Vermont, Zoology Department,
Burlington, VT 05401

ABSTRACT

Clinidium (*Arctoclinidium*) *alleghehiense* n. sp. and *Clinidium* *alleghehiense georgicum* n. ssp. are described and illustrated. A revised key to *Clinidium* of the U.S. is provided.

We have recently undertaken a survey of *Clinidium* in U. S. museums in order to define the ranges of the eastern species more accurately. We were surprised to discover 2 undescribed taxa, probably representing subspecies of a single species.

Clinidium (*Arctoclinidium*) *alleghehiense* Bell & Bell, **new species**. Holotype: Male. PENNSYLVANIA, Pittsburg, 1-VI-24, Chermock (Univ. of Kansas). Paratypes: 2 females, same data, (Univ. of Kansas). 1 male, 1 female same data, (MCZ). 13 males, 2 females. PENNSYLVANIA, Wall, VI-21, H. Klages Collection (Carnegie Museum).

Description: (Fig. 1) Length 5.5-7.0 mm; dark reddish-brown to piceous; dorsal surface, including striation, as in *Clinidium sculptile* Newman; temporal seta absent; apical setae of elytra present; metasternum with complete median sulcus.

Male prosternum not pilose in midline; male front femur sharply angulate as in *sculptile*; front tibia slightly angulate on inner margin proximad to antenna-cleaner (less angulate than in *sculptile*); calcars of hind tibiae (Fig. 7) smaller than in *sculptile* but larger than in *rosenbergi*, $C/T_2=0.39$; $C/T_3=0.37$; $C_2/C_3=0.96$ (ratios calculated as in Bell, 1970); pilose area of sternite II narrow, T-shaped (Fig. 8c); sternites IV and V each with complete, dilated pilose strip connecting transverse sulci (Fig. 4).

Female with transverse sulci of sternite III deeply excavated (Fig. 3); those of sternite IV not at all excavated; sternite VI not impressed or only slightly so (Fig. 5); cauda small, rounded, more reduced than in *sculptile* (Fig. 6).

Range: Known from localities in western Pennsylvania near Pittsburgh.

Locality Records: (See abbreviations for collections listed after discussion) PENNSYLVANIA: Allegheny County [CM, CU]; Allegheny (now the Northside district of Pittsburgh) [MO]; Jeannette [CM, UVM]; Pittsburgh [UK, CM, UVM]; Wall [CM].

A group of 3 specimens (1 male [FM], 2 females [CA]) from Mt. Mitchell, Black Mts., North Carolina, are provisionally assigned to this form. Though the male agrees with the Pennsylvania specimens, rather than the subspecies from Georgia described below, in having the median pilose area on sternite V, it differs from both Pennsylvania and Georgia specimens in having the inner impression of sternite VI more deeply impressed and extending anteriorly

nearly to the anterior pits, while the pilose area on sternite II is more broadly dilated posteriorly (so that it resembles a vertical section through a mushroom rather than the letter T). This form may be subspecifically distinct, but more material is necessary to establish the fact.

Clinidium (*Arctoclinidium*) *alleghehiense georgicum*
Bell & Bell, **new subspecies**

Holotype: Male. GEORGIA, Cartersville, 26-III-39, P. W. Fattig [USNM].
Paratypes: 1 male, same data, [GA]; 2 females, same data [FM]; GEORGIA: 1

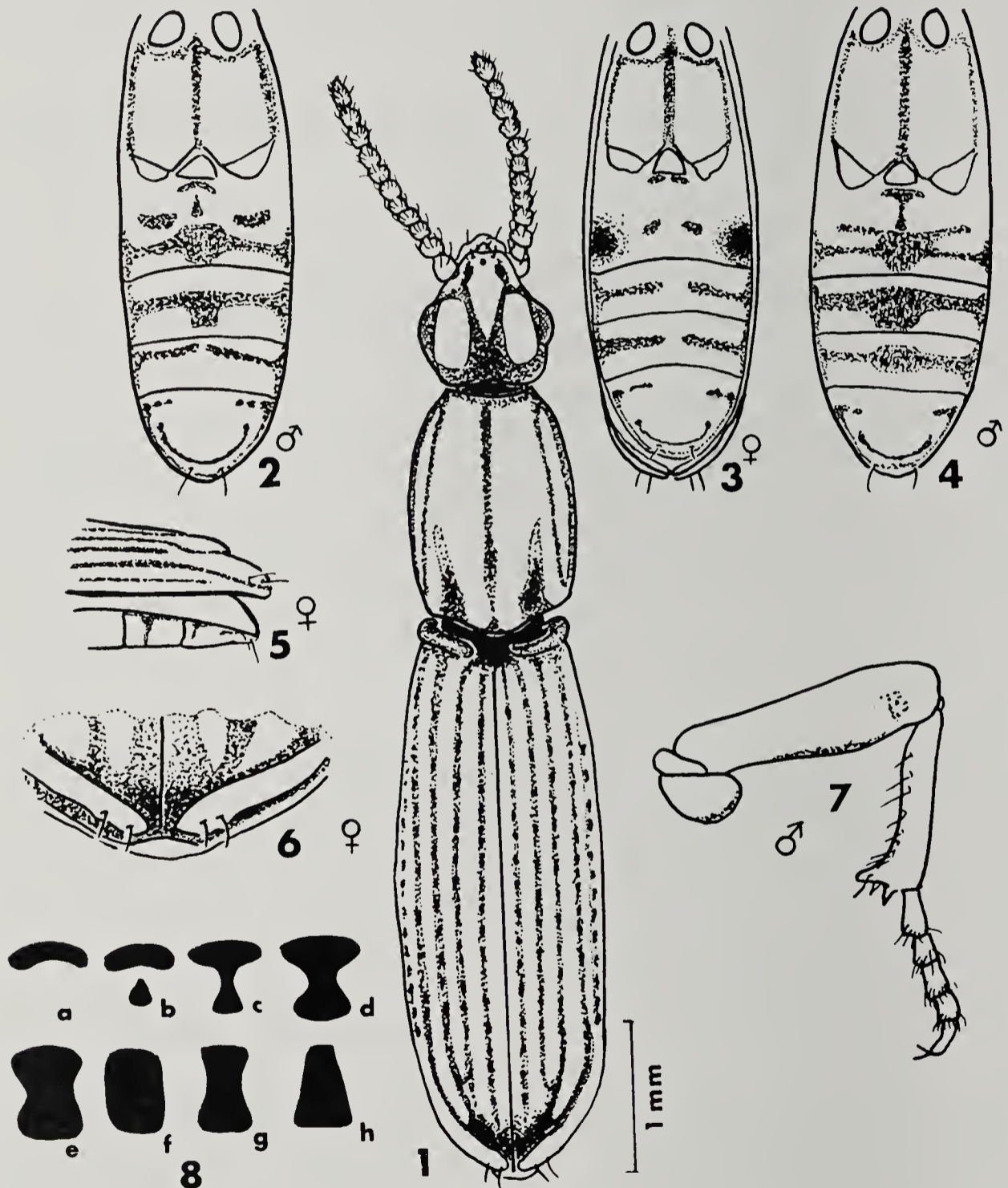


Fig. 1-8. *Clinidium* spp.: 1) *alleghehiense* s. str. dorsal view, legs not shown; 2-4) pterothorax and abdomen, ventral view: 2) *alleghehiense georgicum*, male; 3) *alleghehiense* s. str., female; 4) *alleghehiense* s. str., male; 5) lateral view of tip of abdomen and elytron, female, *alleghehiense* s. str.; 6) tip of abdomen and elytron, female, *alleghehiense* s. str.; 7) hind leg, male, *alleghehiense* s. str.; 8) pattern of pilosity of sternite II, male: a-b. *alleghehiense georgicum*; c. *alleghehiense* s. str.; d. *sculptile*; e. *rosenbergi*; f. *baldufi*; g. *valentinei*; h. *calcaratum*.

male, Athens, 6-X-54, K. Parrish [GA]; 2 males, West Pace's Ferry X., Marietta Hgy (DeKalb County), 12-IX-54, W. H. Cross [UVM]; 1 female, Dallas, 16-IV-44, P. W. Fattig [UVM].

Description: Length 5.6-6.3 mm, similar to *allegheniense*, but with males lacking pilose area at midline of sternite V (Fig. 2) and T-shaped pilose area on sternite II much narrower and usually interrupted; in 1 specimen the stem of the T is entirely absent, so the pilose area is in the form of a chevron (Fig. 8a). Female as in *allegheniense*.

Range: Confined to the mountains of northern Georgia.

Locality Records: GEORGIA: Athens [UVM]; Cartersville [GA, FM]; Dallas [UVM]; West Pace's Ferry X (De Kalb County) [UVM].

Discussion: Males of new taxa resemble *Clinidium baldufi* Bell in lacking the pilose strip on the midline of the prosternum. However, they differ from *C. baldufi* in having a much smaller hind calcar and in lacking a median carina on sternites IV and V. The median pilose area on sternite II is in the form of a narrow letter T (often interrupted in *C. allegheniense georgicum*), while in *C. baldufi* it is in the form of a broad rectangle (Fig. 8f). This character has not been used previously, although it seems that the males of each species of *Clinidium* have a characteristic pattern on the second sternite. *C. sculptile* (Fig. 8d) has a very broad "T", with the base almost as wide as the top, while in *C. rosenbergi* (Fig. 8e) the patch has the top and bottom equally broad, with a constriction at the middle, like a broad hour glass. In both *C. valentinei* and *C. calcaratum* the widest point is at the posterior margin. *C. calcaratum* (Fig. 8h) has a trapezoidal shape whereas *valentinei* (Fig. 8g) is slightly constricted in the middle and widened at the anterior margin.

Females of the new species resemble *C. baldufi* rather than other eastern species in having deep excavations in the transverse sulci of Sternite III, and in lacking any excavation in the sulci of Sternite IV. They differ from *C. baldufi* in having a reduced and rounded cauda and in having the last sternite unimpressed or only slightly impressed. Both of these characters are similar to *C. rosenbergi*.

It should be noted that the diagnostic features of the eastern species of *Clinidium* are located entirely on the ventral surface. Accordingly, rhyssid beetles should always be mounted so that the ventral surface is fully exposed.

REVISED KEY TO *Clinidium* OF THE UNITED STATES
(Supersedes that of Bell, 1970)

- | | |
|---|---------------------------|
| 1a. Calcars present (males) | 2 |
| 1b. Calcars absent (females) | 8 |
| 2a. Metasternum not sulcate | 3 |
| 2b. Metasternum with median sulcus | 4 |
| 3a. Hind femur with large ventral tooth; hind calcar small, less than 0.25 length of tibia; temporal seta present | <i>valentinei</i> Bell |
| 3b. Hind femur without tooth; hind calcar very large, more than 0.5 length of tibia; temporal seta absent | <i>calcaratum</i> Leconte |
| 4a. Prosternum with median pilose area | 5 |
| 4b. Prosternum glabrous in midline | 6 |

- 5a. Transverse sulci of sternite V broadly separated by glabrous space; hind calcar small *rosenbergi* Bell
- 5b. Transverse sulci of sternite V closely approximate, the space between them occupied by a pilose area..... *sculptile* Newman
- 6a. Sternites IV and V each with very fine median carina; that of sternite V completely dividing median pilose area, that of sternite IV dividing pilose area only in posterior half; hind calcars moderately large *baldufi* Bell
- 6b. Sternites IV, V without median carina 7
- 7a. Transverse sulci of sternite V separated by a pilose area.....
..... *allegheniense* s. str., new species
- 7b. Transverse sulci of sternite V separated by a glabrous space....
..... *allegheniense georgicum*, new subspecies
- 8a. Metasternum not sulcate 9
- 8b. Metasternum with median sulcus..... 10
- 9a. Transverse sulci of sternite III deeply excavated laterally, those of sternite IV not at all excavated..... *valentinei* Bell
- 9b. Transverse sulci of sternite III not at all excavated, those of sternite IV deeply excavated laterally *calcaratum* Leconte
- 10a. Transverse sulci of sternites III and IV both excavated laterally..... 11
- 10b. Transverse sulci of sternite III deeply excavated laterally, those of sternite IV not at all excavated..... 12
- 11a. Sternite VI not impressed; excavations of sternites III and IV equal *rosenbergi* Bell
- 11b. Sternite VI distinctly impressed; excavations of sternite IV smaller than those of sternite III *sculptile* Newman
- 12a. Sternite VI very deeply impressed; cauda angulate, projecting..
..... *baldufi* Bell
- 12b. Sternite VI not impressed or only slightly so; cauda small, rounded..... *allegheniense* s. str. Bell & Bell, new species.
..... *allegheniense georgicum* Bell & Bell, new subspecies.

ABBREVIATIONS AND ACKNOWLEDGMENTS

CA, California Academy of Science; CM, Carnegie Museum of Natural History; CU, Cornell University; FM, Field Museum; GA, University of Georgia; MCZ, Museum of Comparative Zoology, Harvard; MO, University of Missouri; UK, University of Kansas; UVM, University of Vermont. We wish to thank the curators of the lending institutions for the opportunity to study their collections of *Clinidium*.

REFERENCE

- BELL, R. T. 1970. The Rhysodini of N. America, Central America, and the West Indies (Col:Carabidae or Rhysodidae). Misc. Publ. Ent. Soc. Amer. 6(6):289-324.

